ACC NR: AP7002657

[illegible], and III in the source. The beneficial effect of the presence of 3—4 Cl atoms per phenyl group was attributed to accelerated formation on the surface of the rubbing metals of a metal chloride film. Such a film prevents the immediate metal-to-metal contact which causes seizure. [WA-28]

SUB CODE: 11, 07/ SUBM DATE: none/ OTH REF: 007/ ATD PRESS: 5111

Card 3/3

ACC NR: AP7006909 (A, N) SOURCE CODE: UR/0191/67/000/002/0041/0043

AUTHOR: Koroleva, T.V.; Raskin, Yu.Ye.; Krasovskaya, T.A.; Sobolevskiy, M.V.; Gornets, L.V.

ORG: none

TITLE: Lubricating properties of polymethyl (chlorophenyl) siloxanes

SOURCE: Plasticheskiye massy, no. 2, 1967, 41-43

TOPIC TAGS: lubricant, silicone lubricant, lubricity, siloxane ~~polymethylchlorophenylsiloxane~~

ABSTRACT:
A study was made of the effect on the lubricity of polymethyl(chlorophenyl)-siloxanes of 1) the methyl/phenyl group ratio in the middle and at the end of the backbone, and 2) the chlorophenyl group distribution along the backbone. The lubricity was tested in a four-ball apparatus; the criteria used were the diameter of the wear spot on the lower balls, the friction coefficient at various loads, and the character and magnitude of the friction force. The effect of the methyl/phenyl group ratio was studied for the following polydisperse mixtures:

Card 1/4 UDC: 678.84.01:621.891.22

ACC NR: AP7006909

Polysiloxanes I

$(CH_3)_3Si[OSiCH_2C_6H_4]_4OSi(CH_3)_3$ (1)

$(CH_3)_3Si[OSi(CH_3)_2]_3[OSiCH_2C_6H_4]OSi(CH_3)_3$ (2)

$(CH_3)_3Si[OSiCH_2C_6H_4]_3[OSiCH_2C_6H_4Cl]OSi(CH_3)_3$ (3)

$(CH_3)_3Si[OSi(CH_3)_2]_3[OSiCH_2C_6H_4Cl]OSi(CH_3)_3$ (4)

$(CH_3)_3Si[OSiCH_2C_6H_4]_2[OSiCH_2C_6H_3Cl_2]OSi(CH_3)_3$ (5)

$(CH_3)_3Si[OSi(CH_3)_2]_2[OSiCH_2C_6H_3Cl_2]OSi(CH_3)_3$ (6)

Polysiloxanes II

$(CH_3)_3Si[OSi(CH_3)_2]_2[OSiCH_2C_6H_4Cl]_2OSi(CH_3)_3$ (1)

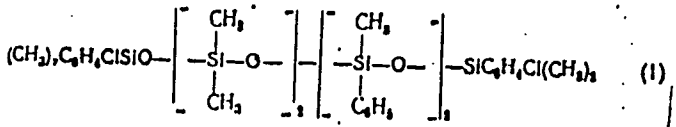
$(CH_3)_2C_6H_5Si[OSi(CH_3)_2]_2[OSiCH_2C_6H_4Cl]_2OSiC_6H_5(CH_3)_2$ (2)

$CH_3(C_6H_5)_2Si[OSi(CH_3)_2]_2[OSiCH_2C_6H_4Cl]_2OSi(C_6H_5)_2CH_3$ (3)

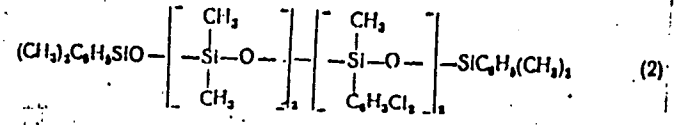
It was found for polysiloxanes I, that at a constant number of trimethylsiloxane end groups per molecule, an increase in the methyl/phenyl ratio improves lubricity. For polysiloxanes II, it was found that the replacement of methyl end groups by phenyl end groups has an adverse effect on

Card 2/4

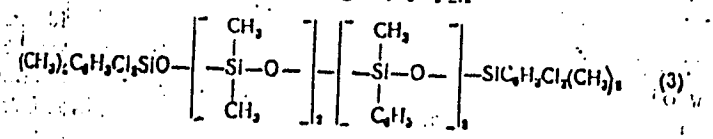
lubricity. It was concluded that an increase in the number of phenyl groups in the middle and at the end of the chain has an adverse effect on the lubricity of polymethyl(chlorophenyl)siloxanes. Therefore, a determination of the effect of the distribution of chlorophenyl radicals along the backbone on lubricity required a comparison of oligomers having not only the same chlorine content but also the same number of methyl and phenyl radicals. The effect of the chlorophenyl radical distribution on lubricity was studied for polysiloxanes III:



(1)



(2)



(3)

ACC NR: AP7006909

Comparison of III-1 with II-2 showed that the transfer of a chlorophenyl radical from the middle to the end of the chain substantially decreases the wear spot but does not change the friction coefficient. Comparison of III-2 and III-3 showed that the position of dichlorophenyl radicals has virtually no effect on lubricity. Evidently, for such a chain length (6 units) the presence of two dichlorophenyl radicals ensures virtually the same lubricity regardless of their position. Orig. art. has: 5 [illegible] figures.

[SM]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 006/
ATD PRESS: 5116

Card 4/4

YEREMEYEV, G.G.; KRASOVSKAYA, T.K.

Determination of annual temperature gradient for the design of structural elements for climatic influence. Inzh.-fiz. zhur. 8 no.2:190-197 F '65. (MIRA 18:5)

1. Institut stroitel'noy fiziki, Moskva.

KRASOVSKAYA, T.M.

Accounting for asynchronism of the formation of streamflow in computing the water resources of the Ukraine. Trudy UkrNIGMI no.50:78-85 '65. (MIRA 18:11)

AUTHORS: Shpeyzman, V. M., Krasovskaya, Ye. A. 32-2-23/60

TITLE: A Simplified Method for the Determination of Humidity of Materials Used in Welding (Uproshchennyy metod opredeleniya vlazhnosti materialov, primenyayemykh pri svarke).

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 2, pp. 187-188 (USSR).

ABSTRACT: The methods employed hitherto for the determination of crystal water either called for complicated apparatus, or worked with a little accuracy. The present method consists of a collection of the humidity separated from the sample smelted in vacuo by phosphorus anhydride. The appliance used here is constructed analogously to that according to G.I. Batalin for the determination of hydrogen in steel according to the vacuum smelting method. A cartridge contains the phosphorous anhydride, the sample under investigation is mounted at the end of a glass tube, which can be stuck into a furnace. The tube is connected with a manometer and can be evacuated (to about 0,1 mm). Previous to the investigation the sample is desiccated at 105 - 110° C in order to remove the adsorbed and hygroscopic humidity. The determination of crystal water

Card 1/2

A Simplified Method for the Determination of Humidity of Materials Used in Welding. 32-2-23/30

is performed by weighing of the cartridge with the phosphorus anhydride previous to and after the experiment. From a table comparing the results obtained by the here described method with results from the usual smelting method it can be seen, that better results are obtained with first one, because with the second other volatile portions evaporate apart from the crystal water during smelting. There are 1 figure, 1 table, and 1 reference, which is Slavic.

AVAILABLE: Library of Congress

1. Welding materials-Moisture content 2. Humidity-Measuring
3. Phosphorus anhydride-Applications

Card 2/2

STAROSKOL'SKIY, Aleksey Alekseyevich; KRASOVSKAYA, Yekaterina Nikolayevna; SIBIRTSEV, S.L., retsenzent; GUSEVA, Ye.M., redaktor; MEDVEDEVA, L.A., tekhnicheskiy redaktor

[Dyeing and finishing of textile and haberdashery goods] Krashenie i otdelka tekstil'no-galanterejnykh izdelii. Moskva, Gos. nauchno-tekhn. izd-vo M-va legkoi promyshl. SSSR, 1956. 187 p.
(MLRA 10:5)

(Dyes and dyeing) (Textile industry)

SAPOZHNIKOV, D.I.; MAYEVSKAYA, A.N.; KRASOVSKAYA-ANTROPOVA, T.A.; PRIALGAUSKAYTE, L.L.; TURCHINA, V.S.

Effect of anaerobic conditions on changes in the ratio of main carotinoids in green leaves [with summary in English]. Biokhimiia 24 no.1:39-41 Ja-F '59. (MIRA 12:4)

1. Botanical Institute, Academy of Sciences of the U.S.S.R., Leningrad.

(LUTEIN) (VIOLAXANTHIN)
(PLANTS, EFFECT OF OXYGEN ON)

KRASOVSKIY, A., inzh.-podpolkovnik

Adjustment of a.c.generators. Av.i kosm. 46 no.9:59-61 S '63.
(MIRA 16:10)

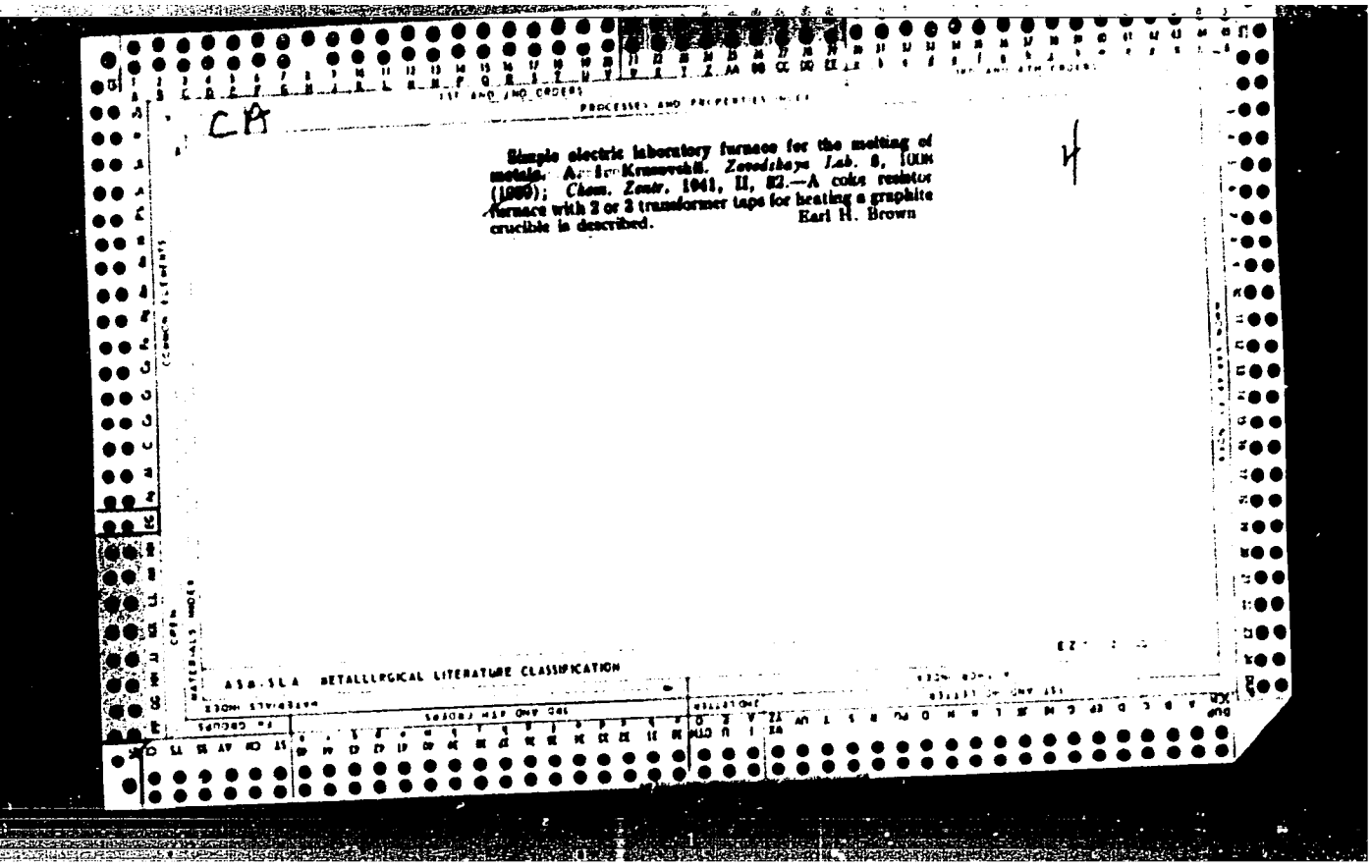
KRASOVSKIY, A.

Tamed lightning. Sov. foto 21 no. 2:3 F '61. (MIRA 14:2)

1. Korrespondent Fotokhroniki Telegrafnogo agentstva SSSR.
(Electric transformers—Testing)

KRASOVSKIY, A., inzh.-podpolkovnik

The Mi-6 helicopters in northern regions. Av. i kosm. 48 no.10:68-70 O '65. (MIRA 18:11)



CA

Simple electric laboratory furnace for the melting of metals. A. I. Krasovskii. *Zavodskaya Lab.* 8, [UUR (1939); *Chem. Zentr.* 1941, II, 82.—A coke resistor furnace with 2 or 3 transformer taps for heating a graphite crucible is described. Earl H. Brown

4

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KRASOVITSKIY, A.

Architecture - Competitions

Results of the contest for the best residential and public buildings. A. Krasovitskiy. Zhil. kom. khoz. 2 no. 5, 1952.

Monthly List of Russian Accessions. Library of Congress , September 1952. UNCLASSIFIED.

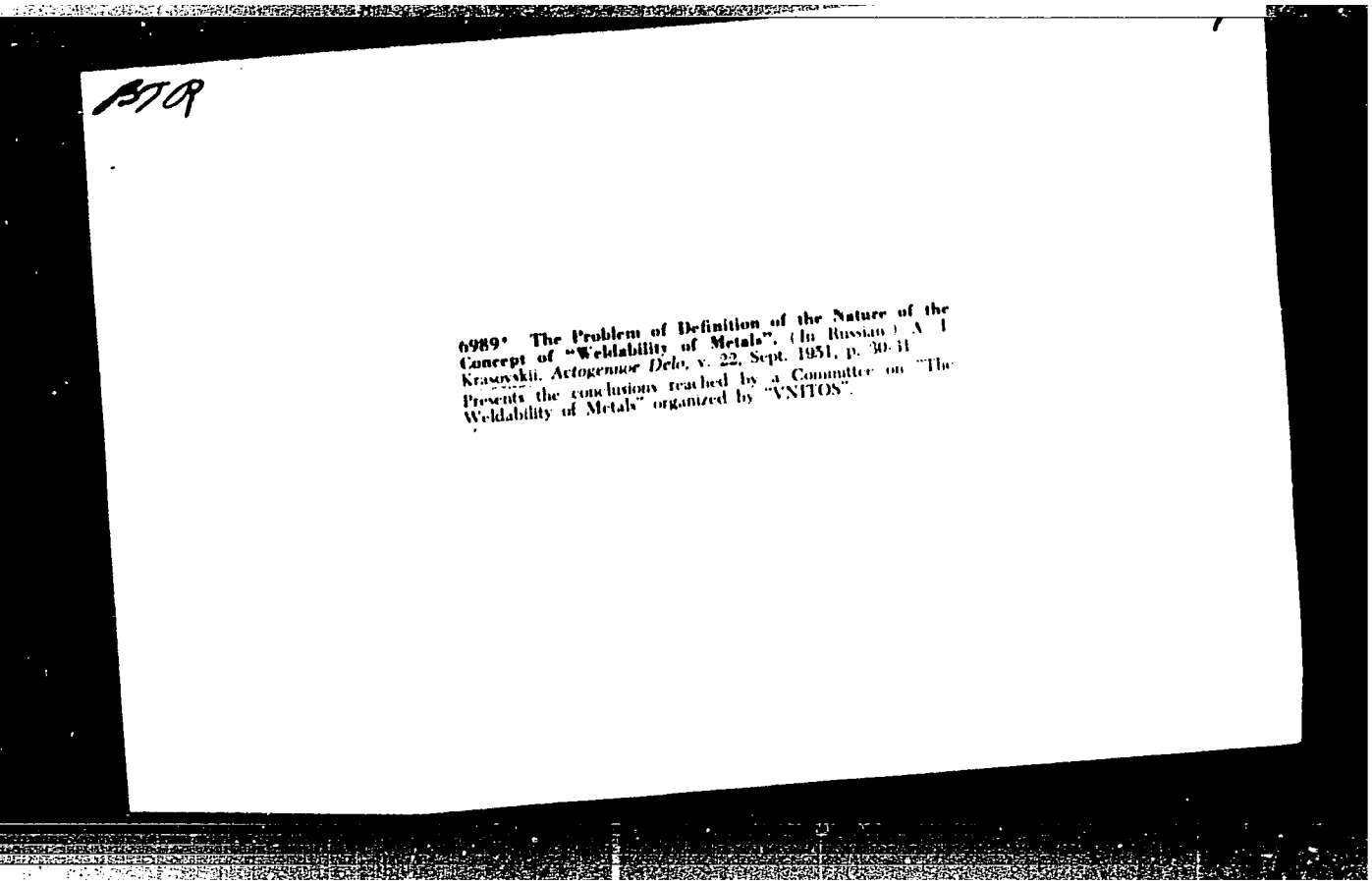
KRASOVSKIY, A.

"On the Viscosity of Electron Gas," Zhur. Esper. i Teoret. Fiz. 10, No 6, 1940

KRASOVSKIY, A. I. Cand. Tech. Sci.

Dissertation: "Forge Welding." Moscow Order of the Labor Red Banner Higher Technical School imeni N. E. Bauman, 3 Mar 47.

SO: Vechernyaya Moskva, Mar, 1947 (Project #17836)



BTR

6989* The Problem of Definition of the Nature of the Concept of "Weldability of Metals". (In Russian.) A. I. Krasovskii. *Avtogennoe Delo*, v. 22, Sept. 1951, p. 30-31

Presents the conclusions reached by a Committee on "The Weldability of Metals" organized by "VNITOS".

KRASOVSKIY, A.I.

PHASE I

00000072

BOOK

Call No.: TS227.K67

Author: KRASOVSKIY A.I.

Full Title: THE PRINCIPLES OF DESIGNING WELDING SHOPS.

Transliterated Title: Osnovy proektirovaniia svarochnykh tsekhov.

Publishing Data

Originating Agency: None.

Publishing House: State Publishing House of Scientific-Technical Literature on Machine Building. (Mashgiz)

Date: 1952. No. pp.: 458. No. of copies: 8,000.

Editorial Staff

Editor: Sokolov, E.V., Eng., Stalin Prize Laureate Zvegintseva, K.V., Eng.

Editor-in-Chief: None.

Technical Ed.: Golovin, S.Ia., Eng. (edited material on heavy machine industry).

Appraisers: Fal'kevich, S.A., Eng. Welding Dept. of the Moscow Aviation Technology Inst.(MATI)

Text Data

Coverage: This book contains theoretical principles and a Systematic Summary of Methods used in the organization and design of welding shops. The material is based on the latest developments in welding technique and on the experience gained in its application in all branches of the Soviet machine-building industry. We find also a number of original reference data specially compiled. Great attention is given to the question of the technical and economical efficiency of this kind of production as found in Soviet Industry. The historical role

KRASOVSKIY, A.I.

00000072

Card 2/2

Call No.: TS227.K67

Full Title: THE PRINCIPLES OF DESIGNING WELDING SHOPS.

Text Data

Coverage: (continued)
of Soviet planning institutes is emphasized in matters concerning the designing and application of proper methods in projects of modern welding shops. The book contains 133 charts and 140 tables.

Purpose: The book has been written for students studying the welding art and industry in technical institutes of higher learning and can be used as a textbook in the course on "The Design of Welding Shops". It can also be used as a reference book and a textbook for engineers and technicians working in engineering offices in the machine-building industry, and in the fields connected with the planning and organization of welding establishments.

Facilities: None.

No. Russian References: 94 (given at the end of each chapter).

Available: Library of Congress.

KRASOVSKIY, A.I., kandidat tekhnicheskikh nauk; KRAYCHIK, M.M., kandidat tekhnicheskikh nauk; IN'SHAKOV, N.N., kandidat tekhnicheskikh nauk.

Low-carbon, Bessemer steel and its use for welded structures. Avtog.delo 24 no.5:1-6 My '53. (MLRA 6:5)

1. Vsesoyuznyy tsentral'nyy nauchno-issledovatel'skiy institut Ministerstva putey soobshcheniya. (Steel, Structural)

KRASOVSKIY, A. I.

USSR/Miscellaneous---machine construction

Card 1/1

Authors : Kraichik, M. M., Cand. in Tech. Sciences;and Krasovskiy, A. I., Cand. in Tech. Sciences (Central Scientific-Research Institute of the Ministry of the Building Industry)

Title : The strength of welded joints of low-alloy and low-carbon steels

Periodical : Vest. mash. 34/3, 63-64, Mar/1954

Abstract : Joints made of low-alloy and low-carbon steels by electric-arc welding were subjected to comparative research. They were tested for static, impact and vibration loads. Results showed that the joints of the low-alloy steel take a greater bending angle, but little difference was found in the durability under impact. Tests were also run on the effect of aging. Three Russian references, latest 1951. Graphs; tables.

Institution : .....

Submitted : .....

KRASOVSKIY, A. I.

KRASOVSKIY, A. I.: "The mechanism of electrolytic precipitation of nickel-molybdenum alloys". Moscow, 1955. Acad Sci USSR. Inst of Physical Chemistry. (Dissertations for the degree of Candidate of Chemical Sciences.)

SO: Knizhnaya Letopis' No. 50 10 December 1955. Moscow

AID P - 4517

Subject : USSR/Engineering-Welding

Card 1/2 Pub. 107-a - 3/13

Author : Krasovskiy, A. I.

Title : Selection of Methods for Testing for Weldability of Structural Steel.

Periodical : Svar. proizv., 2, 6-13, F 1956

Abstract : The weldability of steel varies with the process of welding. The author attempts to systematize existing test methods used in developing of new alloy steels, in routine inspection tests and selection of steel for certain welded structures. Among the 34 tests listed in a table are those of the Battelle Memorial Institute, A. M. Dragomirov's method, Chabelka's test, the Henry Schnadt, Brinell and Rockwell methods, and others. 21 Russian references (1941-1955); 7 references (1948-1953) non-Russiar. Two tables.

Svar. proizv., 2, 6-13, F 1956

AID P - 4517

Card 2/2 Pub. 107-a - 3/13

Institution : None

Submitted : No date

AID P - 5279

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 15/18

Author : Krasovskiy, A. I.

Title : On coordination of scientific research work in welding

Periodical : Svar. proizv., 9, 30, S 1956

Abstract : The author briefly outlines the work of the Committee for Coordination of Scientific Research on Welding. The Committee was established at the Metallurgical Institute im. Baykov, A. A., on March 16, 1956.

Institution : None

Submitted : No date

KRASOVSKIY, A.I., kandidat tekhnicheskikh nauk, starshiy nauchnyy sotrudnik.

Weldability characteristics of improved bessemer low-carbon content steel. Trudy TSNII MPS no.116:84-98 '56. (MLRA 9:11)
(Steel--Welding)

KRASOVSKIY, A.I., kandidat tekhnicheskikh nauk, starshiy nauchnyy sotrudnik.

Resistance of low-alloy and low-carbon steels to the formation of hot cracks during arc welding. Trudy TSNII MPS no.116:200-208 '56. (Electric welding)

KRASOVSKIY, A.I.

135-9-23/24

AUTHOR: Krasovskiy, A.I.

TITLE: Conference on Effect of Welding Stresses on the Strength of Welded Structures (Soveshchaniye po voprosu vliyaniya svarochnykh napryazheniy na prochnost' svarnykh konstruktsiy)

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 9, p 44-48 (USSR)

ABSTRACT: The Commission for Coordination of Welding Research Work (at the USSR Academy of Sciences) organized a conference on welding stresses, which was held on 5 June 1957 at the Institute of Metallurgy of the USSR Academy of Sciences. About 150 delegates from research and educational institutions and from industry participated. In preparation of the conference, a work group gave broad information on the coming conference, received 20 reports of which 14 have been selected for discussion. The members of this work group were: Member-Correspondent of USSR Academy of Sciences N.N.Rykalin; Member-Correspondent of USSR Academy of Building and Architecture G.A.Nikolayev; Professors I.V.Kudryavtsev, N.O.Okerblom, N.N.Prokhorov; Candidate of Technical Sciences, Lecturer V.D.Matskevich; Senior Scientific Workers and Candidates of Technical Sciences K.P.Bol'shakov, A.I.Krasovskiy, and V.V.Shevernitskiy. The names of the 14 authors of the selected reports and of 26

Card 1/2

135-9-23/24

Conference on Effect of Welding Stresses on the Strength of Welded Structures

participants of subject conference who took part in discussions are given. The titles of reports are given and their contents are briefly outlined.

ASSOCIATION: Institute of Metallurgy imeni A.A.Baykov, USSR Academy of Sciences (Institut metallurgii imeni A.A.Baykova AN SSSR)

AVAILABLE: Library of Congress

Card 2/2

KRASOVSKIY, A. I. and KODOLOV, V. D.
Inst. of Metallurgy im. A. A. Baykov , Moscow

"Influence of the Ladle Vacuum Treatment on the Weldability of Bessemer Steel."

paper presented at Second Symposium on the application of Vacuum Metallurgy.

Moscow 1-6 July 1958

SOV-135-58-10-3/19

AUTHORS: Krasovskiy, A.I., Candidate of Technical Sciences, and Kodolov, V.D., Engineer

TITLE: Mechanical Properties and Weldability of Bessemer Steel Treated in a Vacuum (Mekhanicheskiye svoystva i svarivayemost' bessemerovskoy stali, obrabotannoy v vakuume)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 10, pp 8-11 (USSR)

ABSTRACT: For several years, the Institute of Metallurgy imeni A.A. Baykov, AS USSR, together with various metallurgical plants, under the supervision of A.M. Samarin, Member Correspondent of AS USSR, have carried out experimental investigations on the vacuum treatment of liquid Bessemer steel in order to obtain steel with a minimum content of gases, which would not reduce its mechanical properties or make it prone to aging. Information is presented on investigations concluded in 1958 at the Metallurgical Plant imeni F.E. Dzerzhinskiy, on the solution of basic problems, including determination of proneness to mechanical aging, aging in welding and brittleness at temperatures lower than room temperature. The experiments are described in detail and it was found

Card 1/2

SOV-135-58-10-3/19

Mechanical Properties and Weldability of Bessemer Steel Treated in a Vacuum

that degasification, obtained by vacuum treatment, reduced the critical temperature of brittleness by 20 - 50°C and raised resistance to aging in cold plastic deformation and welding. Normalization improved the quality of steel and in various cases eliminated proneness to mechanical aging. The most effective vacuum treatment was obtained with steel containing over 0.1% carbon. There are 12 graphs, 4 tables and 4 Soviet references

ASSOCIATION: Institut metallurgii imeni A.A. Baykova AN SSSR (Institute of Metallurgy imeni A.A. Baykov, AS USSR)

1. Steel--Mechanical properties 2. Steel--Welding 3. Steel --Test results 4. Vacuum furnaces--Applications

Card 2/2

AUTHOR: Krasovskiy, A.I. SOV135-58-10-18/19

TITLE: XI Assembly of the International Welding Institute in Vienna (XI assambleya Mezhdunarodnogo instituta svarki v Vene)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 10, pp 44-47 (USSR)

ABSTRACT: The annual assembly of the International Welding Institute took place in Vienna from 28 June to 5 July, 1958. The Soviet delegation included: N.N. Rykalin (Corresponding Member of the AS USSR, Delegation Head); B.Ye. Paton (Member-Correspondent of the AS UkrSSR, Director of the Institute of Electric Welding AS UKrSSR), K.K. Khrenov (Member of the AS UkrSSR); A.N. Shashkov (Candidate of Technical Sciences, Director of VNIIAvtogen); N.Ya. Kochanovskiy (Candidate of Technical Sciences, Deputy-Director of VNIIESO); K.V. Lyubavskiy (Doctor of Technical Sciences, Professor, Head of the Welding Department at TsP NTO Mashprom); N.O. Okerblom (Doctor of Technical Sciences, Professor, President of the Welding Department at LO NTO Mashprom), A.I. Krasovskiy (Senior Scientific Worker of the Institute of Metallurgy of the AS USSR) Ye.V. Sokolov (Chief Engineer of the Moscow Experimental Welding Plant); Ye. K. Alekseyev (Chief Technologist of the Assembly Department at Gosstroy USSR),

Card 1/2

XI Assembly of the International Welding Institute in Vienna

P.T. Dmitriyev (Chief of the Welding Laboratory at NIIKHIMMASh) and B.L. Sukhorukov (Worker of the AS USSR, Secretary-Translator). The following Soviet organizations were accepted as members of the International Welding Institute: Institut elektrosvarki AN USSR (Institute of Electric Welding of the AS UkrSSR); Institut metallurgii AN SSSR (Institute of Metallurgy of the AS USSR): VNIIAvtogen, VNIIESO, TsNIITMASh and NTO Mashprom. N.N. Rykalin, B.Ye. Paton and A.N. Shashkov were appointed as participants in the administration work. Representatives of various countries delivered the 5 groups of reports. The Soviet delegates and experts participated in the work of 15 technical commissions.

1. Welding--USSR

Card 2/2

14(0)
AUTHOR: Krasovskiy, A. I. SOV/30-58-11-21/48

TITLE: News in Brief (Kratkiye soobshcheniya) At the 11th Congress of the International Institute of Welding (Na XI kongresse Mezhdunarodnogo instituta svarki)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 11, pp 87 - 87 (USSR)

ABSTRACT: The Congress met in Vienna from June 28 to July 5. A series of scientific and industrial organizations of the USSR which are active in the field of welding became members of the Institute. The AS USSR sent a delegation of twelve persons headed by N.N.Rykalin. The meetings were devoted to the subject "Welding in Chemical Industry". Reports from fifteen countries were discussed. The Soviet delegation took part in the work of the plenary session and the technical commissions. After the end of the Congress the Soviet delegation visited a number of research institutes and industrial enterprises in Vienna and other cities.

Card 1/2

News in Brief. At the 11th Congress of the International Institute of Welding SOV/[illegible]-11-21/48

The next (twelfth) Conference of the International Institute of Welding will be held in Opatiya (Yugoslavia) in summer 1959.

Card 2/2

SOV/24-58-11-41/42

AUTHORS: Krasovskiy, A. I. and Rykalin, N. N.

TITLE: 11th Congress of the International Welding Institute (XI Kongress mezhdunarodnogo instituta svarki)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 11, pp 149-151 (USSR)

ABSTRACT: Report on the Conference held in Vienna between June 28 and July 5, 1958.

Card 1/1

PHASE I BOOK EXPLOITATION SOV/4193

Krasovskiy, A.I.

Sposoby ispytaniy konstruktsionnoy stali na svarivayemost', primenyayemyye v SSSR i za rubezhom (Methods Used in USSR and Other Countries for Testing Constructional Steels for Weldability) Moscow, 1959. 95 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut nauchnoy informatsii. Otdel nauchno-tekhnicheskoy informatsii. Sektor mashinostroitel'noy promyshlennosti; USSR. Gosudarstvennyy nauchno-tekhnicheskiy komitet.

Tech. Ed.: N.G. Goncharov.

PURPOSE: This booklet is intended for technical personnel engaged in the making and testing of steel weldments.

COVERAGE: This booklet discusses weldability as defined by the International Institute of Welding (1947-1953) and the All-Union Scientific and Technological Society of Welders (1951-1552). Modern methods of testing and rating

Card 1/4

the weldability of metals -- described. The booklet includes tables to be used in the selection of the most efficient welding and testing methods under given conditions and in the choice of type of weldment. The author recommends the further development of weldment testing standards by scientific research institutes. No personalities are mentioned. There are 45 references: 26 Soviet, 13 English, 3 German, 2 French, and 1 Slovak.

TABLE OF CONTENTS:

Introduction 3

Ch. I. Basic Methods and Techniques of Testing the Weldability of Constructional Steel 6
A. Methods of determining the strength and ductility of the metal in welded joints 8
1. Static tensile tests 8
2. Static test for shearing at torsion 10
3. Static bending tests 10
4. Determination of hardness 13
5. Impact tensile test 13
6. Impact bending test 14

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S/081/60/000/003/002/005

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 3, p. 108, # 8423

AUTHOR: Krasovskiy, A. I.

TITLE: Some Problems in the Mechanism of Electrolytic Deposition of Nickel-Molybdenum Alloys

PERIODICAL: Tr. 4-go Soveshchaniya po elektrokhimii, 1956. Moscow, AN SSSR, 1959, pp. 530-535

TEXT: The kinetics was studied of the electric deposition of Ni-Mo alloys from citrate-ammonia electrolytes. It was shown by the method of dividing the summary polarization curves obtained in the codeposition of Ni with Mo into the components pertaining to the separation of Ni, Mo and H_2, that an increase in the Na_2MoO_4 concentration in the electrolyte affects all electrochemical reactions: the rate of H_2 liberation increases continuously, and the rate of Ni and Mo separation passes through a maximum at a Na_2MoO_4 concentration of $1,6 \cdot 10^{-2}$ corresponding to a deposition of a Ni-Mo alloy with 33% Mo, the deposition rate of Mo decreases to zero. It was shown by comparing the change of the equilibrium part of the Mo separation potential, obtained by the method of measuring the emf,

Card 1/2

Some Problems in the Mechanism of Electrolytic Deposition of Nickel-Molybdenum Alloys

and the non-equilibrium part, found by the method of polarization curves, that the non-equilibrium part changes considerably more than the equilibrium part when the Mo content in the deposit varies. The opinion is expressed that the initial increase in the rate of Mo deposition in proportion to an increase in the Na_2MoO_4 concentration is due to an increase in the activity of the molybdate ions in the solution, and the subsequent decrease is caused by an increase in the passivation of the Ni-Mo alloy formed on the electrode, in proportion to an increase in the Mo content in it. At a Mo content of 33-34% in the alloy the passive film on the electrode surface stops the deposition of Ni and Mo completely. In the author's opinion such passivating films are formed also on pure Mo, which is the cause impeding the deposition of Mo on Mo.

Z. Solov'yeva

Card 2/2

18(5,7)
AUTHOR: Kruzovskiy, A.I.

SOV/125-59-7-15/19

TITLE: Participation of Soviet Organizations in the Activities of the International Institute of Welding

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 7, pp 94-95 (USSR)

ABSTRACT: The Paton Institute of Electric Welding, the Institute of Metallurgy imeni A.A. Baykov, VNIIAvtogen, VNIIESO, TsNIIMASh, and MTO Mashprom have become members of the International Institute of Welding (MIS). For co-ordination of participation of Soviet organizations in the activity of the MIS, as well as for co-opting of individual scientists and experts in the field of welding, the Presidium of the USSR Academy of Science founded on April 3, 1959, the National Committee on Welding in the USSR. The basic problems to be confronted within the National Committee's framework are: 1) representation of Soviet welding experts in the MIS; 2) organization of their participation at the international and national conferences outside the Soviet Union;

Card 1/2

Participation of Soviet Organizations in the Activities of the International Institute of Welding

3) consolidation of their connection with the members of the MIS abroad; 4) information of Soviet publicity on the latest developments in the sphere of welding; 5) co-ordination of scientific research with foreign experts. In October 1959, a General Assembly of the National Committee will take place in Opatiya (Yugoslavia), with a view to outlining the set-up for the coming year.

Card 2/2

18(5,7)
AUTHOR: Krasovskiy, A.I., Scientific Secretary

TITLE: Participation of Soviet Organizations in the Work of the International Welding Institute

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 8, pp 43-44 (USSR)

ABSTRACT: As it was already mentioned in this periodical, Nr 10, 1958, 6 Soviet organizations became members of the International Welding Institute in June 1958. To coordinate the participation of these organizations with the work of this institute the president of the Academy of Sciences USSR in April 1959 founded the National Welding Committee of the USSR. The main objectives of this committee are divided in two groups. One group deals with questions concerning the relations with foreign countries and international conferences; the other treats problems which arise at home: the information about the activities of the International Welding Institute, the propagation of foreign experiences, by publications of the lectures held at international conferences and bibliographical

Card 1/3

SOV/135-59-5-12/24

Participation of Soviet Organizations in the Work of the International Welding Institute

information. The National Welding Committee consists of 55 members who come from the leading organizations for welding engineering, the state committees, and the scientific institutes. The first general assembly of the National Committee was held in April 1959. The following 14 technical sub-committees were formed 1) Gas welding and similar processes; 2) arc welding; 3) resistance welding; 4) documentation; 5) tests, dimensions, and welding control; 6) terminology; 7) standardization; 8) health and protection of labor; 9) behavior of the metals during the welding; 10) residual stress and its removal; 11) boilers, containers and pipelines; 12) fatigue tests of the metals; 13) instruction of welding specialists; and 14) designing and construction of weldments and calculations of welded joints. A further general assembly of the National Committee in October 1959 will discuss the results of the 12th conference of the International Welding Institute. The most important task of the committee is

Card 2/3

Participation of Soviet Organizations in the Work of the International Welding Institute

SOV/135-59-8-19/24

to inform Soviet welding engineers about all innovations developed at home and abroad. Three periodicals are used for this purpose: Svarochnoye proizvodstvo (Welding Engineering); Avtomaticheskaya svarka (Automatic Welding); and Metallurgiya (Metallurgy).

ASSOCIATION: Natsional'nyy komitet SSSR po svarke (National Welding Committee of the USSR)

Card 3/3

PHASE I BOOK EXPLOITATION SOV/4548

Akademiya nauk SSSR. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali

Primeneniye vakuuma v metallurgii (Use of Vacuum in Metallurgy) Moscow, Izd-vo AN SSSR, 1960. 334 p. Errata slip inserted. 4,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali.

Resp. Ed.: A.M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: G.M. Makovskiy; Tech. Ed.: S.G. Markovich.

PURPOSE: This collection of articles is intended for technical personnel interested in recent studies and developments of vacuum steelmaking practice and equipment.

COVERAGE: The book contains information on steel melting in vacuum induction furnaces, and vacuum arc furnaces, reduction processes in vacuum, and degassing of steel and alloys. The functioning of apparatus and equipment, especially vacuum furnaces and vacuum booster pumps is also analysed. Personalities are mentioned in connection with some of the articles and will appear in the Table of Contents. Three articles have been translated from English. Some of the

Kazachkov, I.P., and S.I. Khitrik. Effect of Vacuum Treatment [in a Ladle] of the Carbonless Ferrochrome on the Amount of Its Oxide Inclusions 127

Fedorov, T.F., and F.I. Shamray. Physicochemical Principles of Vacuum-Thermic Methods of Treating Lithium 137

PART IV. DEGASSING OF STEEL AND ALLOYS

Novik, L.M., A.I. Lukutin, and A.M. Samarin. Vacuum Treatment of Bessemer Steel 145

Kuznetsov, M.P., and G.K. Tsukanov. The Effect of Vacuum Treatment in Ladle on the Properties of Bessemer Rail Steel 151

Krasovskiy, A.I., and V.D. Kololov. The Effect of Vacuum Treatment in Ladle on the Weldability of Bessemer Constructional Steel 156

Oyks, G.N., G.A. Sokolov, I.I. Anshelos, Han Yeo-wan, V.I. Danilin and M.G. Lapshova. Use of Vacuum for Improving the Quality of Alloyed Steels 160

Markaryants, A.A., and Yu.D. Smirnov. Some Theoretical and Practical Problems of Steel Degassing 178

Churko, N.M., A.F. Tregubenko and Ye.I. Kadinov. The Effect of Vacuum Treatment of Metal Pouring on the Quality of ShKh15 Steel [the work was performed by the Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute) and the "Dneprospetsstal'" (Dnepr Special Electrical Steel Mill, in Zaporozh'ye) with the participation of engineers V.B. Butkovskiy, M.P. Konishchev, T.M. Bobkov, L.U. Barash, A.N. Man', Yu.P. Shamil', A.I. Khitrik, P.A. Zhalo, Yu.P. Valovich and G.P. Parkhomenko] 189

Zolotoputov, N.I., I.N. Konovalov, A.N. Glazov, L.I. Zaler, M.G. Zhuikovich, P.M. Danilov and Ye.N. Shiryaskin. Vacuum Treatment of Molten Transformer Steel and of ShKh15 Steel [A.S. Shtepa, L.S. Klimasenko, P.S. Plekhanov, V.I. Mesyats, V.Ye. Pashchenko and P.A. Mironov participated in the work] 196

Butakov, D.K., L.M. Mel'nikov, and M.Ya. Brodin. Investigation of Vacuum-Treated Steel for Castings 205

Kaingar, L., and Z. Kletechka. [Czechoslovak People's Republic, Plzeň Plant imeni Lenin]. Use of Vacuum for Raising the Quality of Aluminum Alloys 211

Zhak, G. [Polish People's Republic, Institute of Iron Metallurgy in Gliwice]. Vacuum Melting and Pouring of Alloyed Carbon Steel 219

Burtsev, V.T., R.A. Karasev and A.M. Samarin. Desulfurization of Molten Iron Alloys in Vacuum 223

Vishkarev, A.F., and V.V. Kondakov. Destruction of Nonmetallic Inclusions in the Vacuum Treatment of Steel 230

Briving, E.Ya., R.A. Karasev and A.M. Samarin. Investigation of the Kinetics of Steel Decarburization in Vacuum by Means of a Mass Spectrometer 243

Musikhin, V.I., O.A. Yesin, and B.M. Lepinskikh. The Effect of Hydrogen and Nitrogen on the Activity of Silicon in Molten Cast Iron 248

Marmer, E.N. Investigation of Gas Liberation and Penetrability of Ceramics in Vacuum 251

3/8

KRASOVSKIY, A.I.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826210(

VLADIMIRSKIY, T.A., doktor tekhn.nauk; VROBLEVSKIY, R.V., inzh.; GLEBOV, L.V., inzh.; GODIN, V.M., kand.tekhn.nauk; GUZOV, S.G., inzh.; GULYAYEV, A.I., inzh.; YERSHOV, L.K., inzh.; KOCHANOVSKIY, N.Ya., kand.tekhn.nauk; LYUBAVSKIY, K.V., prof., doktor tekhn.nauk; PATON, B.Ye., akademik, prof., doktor tekhn. nauk; RABINOVICH, I.Ya., kand.tekhn.nauk; RADASHKOVICH, I.M., inzh.; RYKALIN, N.N., prof., doktor tekhn.nauk; SPEKTOR, O.Sh., inzh.; KHRENOV, K.K., akademik, prof., doktor tekhn.nauk; CHERNYAK, V.S., inzh.; CHULOSHNIKOV, P.L., inzh.; SHORSHOROV, M.Kh., kand.tekhn.nauk; BRATKOVA, O.N., prof., doktor tekhn.nauk, nauchnyy red.; ERINBERG, I.L., kand.tekhn.nauk, nauchnyy red.; GEL'MAN, A.S., prof., doktor tekhn.nauk, nauchnyy red.; KONDRATOVICH, V.M., inzh., nauchnyy red.; KRASOVSKIY, A.I., kand.tekhn.nauk, nauchnyy red.; SKAKUN, G.F., kand.tekhn.nauk, nauchnyy red.; SOKOLOV, Ye.V., inzh., red.; IVANOVA, K.N., inzh., red.izd-va; SOKOLOVA, T.F., tekhn.red.

[Welding handbook] Spravochnik po svarke. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. Vol.1. 1960. 556 p.
(MIRA 14:1)

1. AN USSR (for Paton, Khrenov). 2. Chleny-korrespondenty AN SSSR (for Rykalin, Khrenov).
(Welding--Handbooks, manuals, etc.)

S/076/60/034/06/16/040
B015/B061

18.7400
5.4600

AUTHORS: Vagramyan, A. T., Krasovskiy, A. I., Petrova, Yu. S., Solov'yeva, Z. A. (Moscow)

TITLE: The Role of Passivation in the Electrodeposition of Metals

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 6, pp. 1255-1259

TEXT: The action of the rate of passivation on the electrochemical reduction of metal ions in aqueous solutions was examined. A series of experiments took place in manganosulfate solutions with and without additions of ammonium sulfate at pH = 8 and at 25°C. The results show (Table) that the reduction of the manganese ions takes place through an activation of the electrode surface by ammonium sulfate. In a further series of tests a common electrolytic depositing of molybdenum and nic... from ammonium citrate solutions was examined. The rate of depositing of the nickel rises through the activation of the surface with increasin... concentrations of ammonia. One of the main obstacles to the reduction of metal ions is the passivation of the surface. Metals with a great

Card 1/2

passivation tendency are hard to reduce on the cathode, and can be divided into three groups in this respect: 1) Metals which are deposited by relatively low overvoltage, such as Sn, Cd, Cu, Ag, etc., 2) Metals which are deposited at high overvoltage, such as Fe, Ni, Co, and Cr, Mn, etc., 3) Metals which cannot be deposited in pure form from aqueous electrolytes, such as Mo, W, U, Nb, Ti, Ta. In order to reduce metal ions, it is necessary to produce conditions which hinder passivation of the electrode surface, or at least strongly reduce it. R. I. Agladze is mentioned in the text. There are 4 figures, 1 table, and 4 references: 2 Soviet and 2 British.

ASSOCIATION: Akademiya nauk SSSR Institut fizicheskoy khimii Moskva (Academy of Sciences of the USSR, Institute of Physical Chemistry, Moscow)

SUBMITTED: August 6, 1958

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S/135/61/000/001/003/018
A006/A001

AUTHORS: Krasovskiy, A.I., Candidate of Technical Sciences, Kuznetsov, V.A., Engineer

TITLE: Quality Control of Welding and Welding Materials

PERIODICAL: Svarochnoye proizvodstvo, 1961, No. 1, pp. 10 - 13

TEXT: A number of machines for the quality control of welding materials and weld joints is shown in an exhibition. The following units are listed. The [illegible] (IMET-TsNIIChM) machine is an improved variant of the IMET-II machine. Its operational principle is based on the expansion of the weld metal at different deformation speeds during the crystallization of the welding pool. The tests are made by bending butt welds along or across the seam (Figure 2). Composite specimens are used of 5 - 25 mm thickness, 20 - 60 mm width and 200 mm length. The technical characteristics of the unit are: limit changes of circumferential speed of the bending lever: 1.8 - 208 mm/min (at a lever length of 90 mm); limit changes of angular speed of the lever 0.02 - 2.3 degree/min· maximum angle of bending the specimens: 20°; 50-watt motor; 1,390 rpm; a-c 220 v. The machine is recommended for developing new types of welding materials and methods. The [illegible]-1-4

Card 1/7

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S/135/61/000/001/003/018
A006/A001

Quality Control of Welding and Welding Materials

(IMF-1-4) machine is intended for the qualitative determination of hot crack sensitivity during welding, depending on the base metal, electrode welding wire and flux material, by tension or bending of specimens. The unit is equipped with an electric drive from an a-c 220/380 v circuit, and with 2 arc automatic welding devices. Specimens of 2 - 16 mm thickness can be tested by predrilling butt or Tee-welds or when building up with a 2 - 6 mm diameter wire or 3 - 5 mm diameter electrode, 150 - 500 amps current and 4 - 50 m/hr welding speed. The deformation speed ranges between 1 to 225 mm/min; the number of deformation steps is 15; maximum deformation force - 15 tons. A machine is shown for the determination of hot crack resistance of welded standard specimens of not less than 10 mm thick base metal. The distance between the movable grips of the specimen in the machine is 180 mm; vertical motion speed of the grips: 1 to 20 mm/min; there are 30 regulation steps; the maximum bending force attains 10 tons. A stand with posters describes a method of determining the cold crack resistance of welded specimens. Specimens without notches or with two symmetrical notches are loaded until breakdown by static tension after cooling down to 20-25°C. The basic factor of the method is the production of a constant, extended linear strained state in the specimen, permitting the study of the effect of various factors (chemical composition of the steel, electrode wire, flux, welding method, residual stresses, nature of heat treatment) on

Card 2/7

the appearance of cold cracks in the joints. A deficiency of the method is the limited range of temperature. The equipment for welding quality control includes the following machines: the ЛСТ-1 (DST-1) ultrasonic flaw detector for the revealing of defects in longitudinal pipe butt seams, operating on the pulse system. The defect is represented on a screen. The technical characteristics are: ultrasonic oscillation frequency: 2.5 Mc frequency of emission of operational pulses: 600 cycles; 220 v a-c, 50 cycles feed source; power consumed: 450 watts; acoustic contact medium - water assortment of pipes to be tested: 76 - 152 mm diameter; 3-6 mm wall thickness. An experimental model of a machine for the automatic ultrasonic control of circular weld joints in metal pipes was designed by N.V. Troitskiy. The machine is equipped with a redesigned prismatic pickup with a focused ultrasonic beam; the linear circumferential motion speed of the pickup is 210 mm/min; the number of its oscillations per minute is 70; the diameter of pipes to be inspected is 200 - 1,000 mm; the thickness of the metal is 3 - 20 mm; the angle of incidence of the beam is 40°; the focal distance is 40 mm; operating frequency - 2.5 Mc. The УДМ-1 (UDM-1) pulse ultrasonic flaw detector is intended to reveal defects at 5 to 2,500 mm depth underneath the surface of large-size metal blanks, semiproducts and simple-shaped finished products. The technical characteristics of the machine are: defects of not less than 1 mm^2 reflecting surface

are revealed by using longitudinal and transverse oscillations; the magnitude of error is not over 1 - 1.5% when measuring the distance from the defects, the thickness of the part and the ultrasonic frequency; optical and sonic signals of defects when operating with straight or inclined pickups are employed; an electronic magnifying glass makes it possible to examine any layer of the work piece on a magnified scale; the distance from the defect, the material thickness and the distance using transverse oscillations are determined on one scale after simple resetting; operation with one or two heads is possible. A method of layer inspection of weld joints with the use of the described device is demonstrated (Figure 6). The МД-9 (MD-9) magnetographical flaw detector is intended for the inspections of butt welds of sheets and pipes of 5-12 mm thickness by two operations: 1) magnetizing of the "recordings" of dispersion fields over the defects on a ferromagnetic tape; 2) reproduction of magnetic dispersion fields recorded on the tape on an electron-beam valve screen. The МД-138 (MD-138) type electromagnetic flaw-detector is used for the inspection of butt welds on low carbon and low-alloy 5 - 30 mm thick steels. The control is made by the displacement of a magnetic head over the joint and the defect is revealed by a signal lamp. The device is portable and fed from a 220 v a-c circuit; efficiency is 0.2 m/min; operational radius - 15 m; weight 25 kg. The magnetic portable ДМП-2 (DMP-2) type flaw detector is

intended to reveal surface and sub-surface defects in large-size steel work by sections, and for the inspection of weld joints by the method of magnetic suspensions. Annular magnetizing is performed with a smooth control of both the alternating current up to 1,500 amps and of the pulse current up to 400 amps. A hinged electromagnet makes possible the longitudinal magnetization by d-c. The feed source is a 220 v a-c circuit of 50 cycles; power required is not over 8 kvamp. The [illegible]-5-2 (GUP-UCh-5-2) device is used for the industrial inspection of weld joints in shops or on the site; the γ-radiation source is 192-iridium with an intensity of 5 g-equiv. of radium. The portable automatic [illegible]-A-2M (GUP-A-2M) type Gamma device for the industrial inspection of circular seams in metal structures makes possible to reveal defects in difficulty accessible spots or to inspect several parts by one exposure. Co-60 radioactive isotope is used as γ-radiation source; its intensity is up to 1 g-equiv. of radium; hardness of radiation is 1.25 Mev. Thickness of the steel inspected is 110 - 120 mm. A lead container for radioactive Co-60 was redesigned by Engineer T.G. Cherevko; it is convenient in operation and assures safe work conditions. The [illegible]-400-5-1 (RUP-400-5-1) X-ray apparatus is used for the examination of metals including up to 120 - 130 mm thick steel.

Card 5/7

Quality Control of Welding and Welding Materials

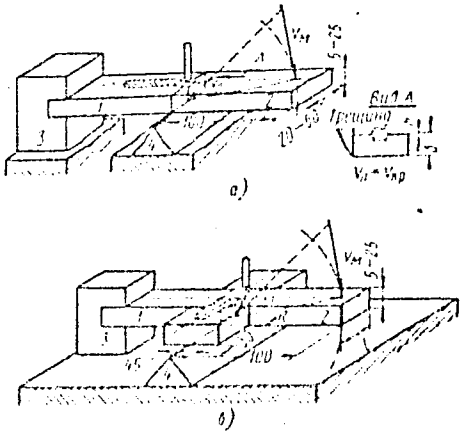
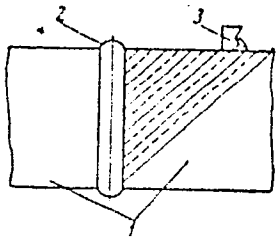


Figure 2

Schematic drawing of bending specimens when testing weld joints for resistance against transverse (a) and longitudinal (b) hot cracks 1 and 2: two halves of a composite specimen fastened by clamps on narrow edges; 3 - fixed clamp of the machine; 4 - prismatic support.

Card 6/7

Figure 6: Schematic drawing of ultrasonic layer control of weld joints in thick part butts.



1 - base metal; 2- weld metal; 3 - pick up of flaw detector.

Tjere are 8 figures.

Card 7/7

KRASOVSKIY, A.I., kand.tekh.n.nauk

Information on the 1961 congress of the International Institute of Welding. Svar. proizv. no.3:45 Mr '61. (MIRA 14:3)
(Welding—Congresses)

21653
S/076/61/035/006/003/013
B127/B203

5.1310

AUTHORS: Krasovskiy, A. I., and Chervova, G. I.

TITLE: Depolarization in the electrodeposition of zirconium on liquid and solid cathodes

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 6, 1961, 1230 - 1234

TEXT: The object of the paper was a study of the change in chemical activity of Zr during interaction with other metals. The experiments were made in a specially designed furnace with graphite electrodes (Fig. 1). The method is based on measuring the I, E curves and determining the decomposition potential. The depolarization of Zr in its deposition from K_2ZrF_6 on Cu, Ni, Fe, Sn and Ag was measured. The reaction was conducted in argon atmosphere containing no O_2, N, H_2. The alloy was produced from chemically pure salts by fusing in HCl atmosphere. The anode used was a graphite crucible of 140cm^2 surface. The surface of the metal cathode was 2cm^2. The reaction was initiated

Depolarization in the ...

with an experimentally found minimum voltage near the decomposition potential. Then, it was brought up to a maximum value of about 2.5 v. Melts with 20% K_2ZrF_6 and 80% NaCl had been used for the investigations.

A residual current could not be avoided at a recording rate of 0.5-15sec. A higher polarization voltage with slower recording eliminates this phenomenon. Fig. 2 shows the results of measurements on Cu, Ni, Sn, Fe, Zr and Ag. At a voltage of 2.4 v, an amperage of 4.05 a and a temperature of 850°C on a Cu cathode, a brilliant metallic layer of 47% Zr and 52.7% Cu was obtained without protective atmosphere; this yielded a low-melting eutectic. There are 5 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The 3 references to English-language publications read as follows: W. G. Guldner, L. A. Wooten, J. Electrochem. Soc, 93, 223, 1948; E. T. Hayes, A. H. Roberson, R. H. Roberson, ibid. 97, 316, 1950; E. A. Gulbransen, K. F. Andrew, ibid., 96, 364, 1949.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii
(Academy of Sciences USSR, Institute of Physical Chemistry)

SHCHAPOV, N.P., doktor tekhn.nauk, prof.; KRASOVSKIY, A.I., kand.tekhn. nauk; VOLOKHVYANSKAYA, E.B., kand.tekhn.nauk; KRAYCHIK, M.M., kand.tekhn.nauk; MAKSIMOV, V.N., inzh.; KOTEL'NIKOV, V.L., inzh.; KUZNETSOV, V.A., inzh.

Properties and the weldability of St. 3kp steel with a high arsenic content. Svar. proizv. no.2:1-7 F '62. (MIRA 15:2)
(Steel alloys--Welding)

KRASOVSKIY, A.I., kand.tekhn.nauk

The International Welding Institute Congress in 1964. Svar.proizv. no.4:41 Ap '64. (MIRA 18:4)

BYKALIN, N.N.; KRASOVSKIY, A.I., kand. tekhn. nauk

Eighteenth Congress of the International Institute of Welding.
Svar. proizv. no.10:43-44 O '65. (MIRA 18:10)

1. Chlen-korrespondent AN SSSR (for Bykalin).

L 62928-65 EPA(s)-2/EWT(m)/EWP(w)/EPF(c)/EWP(i)/EPF(n)-2/EWA(d)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/WW/JW/JG

ACCESSION NR: AP5020505 UR/0078/65/010/008/1948/1950
546.78

AUTHOR: Golovanov, Yu. N.; Krasovskiy, A. I.; Zotov, V. L.; Kuz'min, V. P.

TITLE: Deposition of tungsten from the vapor-gas phase

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 8, 1965, 1948-1950

TOPIC TAGS: metal vapor deposition, tungsten fluoride, tungsten

ABSTRACT: Investigations carried out by the authors for several years established the following: the reduction of WF_6 to metallic W over heated tungsten occurs only at 300°C or above. At lower temperatures, di-, tetra-, and pentafluorides of tungsten are deposited. In the working range (300-900°C), lower fluorides are also formed; they also appear if the time spent by the WF_6/H_2 mixture in the deposition chamber is not sufficient. It is concluded that the formation of these fluorides constitutes the first state of the reduction of WF_6, and that further reduction to metallic tungsten takes place on the hot tungsten surface. If the deposition rate is high, a certain amount of these fluorides is trapped between the growing tungsten layers. The mechanical properties of tungsten prepared from WF_6 are expected to be

Card 1/2

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ACCESSION NR: AP5020505

2

at least as good as those of tungsten prepared by other methods, since no pores were found in the W deposit. Experiments showed that the composition of the H_2-WF_6 mixture and the temperature of the heated tungsten surface have a considerable influence on the structure and properties of the deposit. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 19Dec64 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 009

Card 2/2

GOLOVANOV, Yu.N.; KRASOVSKIY, A.I.; ZOTOV, V.L.; KUZ'MIN, V.P.

Tungsten precipitation from the vapor-gas phase.
Zhur.neorg.khim. 10 no.8:1948-1950 Ag '65.
(MIRA 19:1)

1. Submitted December 19, 1964.

RYKALIN, N.N.; TRUFYAKOV, V.I.; KRASOVSKIY, A.I.

The 18th Congress of the International Institute of Welding.
Avtom. svar. 18 no.10:76-79 O '65. (MIRA 18:12)

KRASOVSKIY, A.I., inzh.-podpolkovnik

This will facilitate control over instruments. Vest.Vozd.Fl. no.6:81-82 Je '60. (MIRA 13:7)
(Airplanes—Equipment and supplies)

ACC NR: AP6024369 SOURCE CODE: UR/0280/66/000/002/0107/0113

AUTHOR: Krasovskiy, A. A. (Moscow)

ORG: none

TITLE: Sufficient conditions for the statistical stability of motion

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1966, 107-113

TOPIC TAGS: motion stability, nonlinear theory, characteristic equation, statistics

ABSTRACT: This work is a continuation of a previous investigation (Krasovskiy, A. A. Tekhnicheskaya kibernetika, 1965, no. 4) in which the author had introduced the concept of statistical stability of the motion of nonlinear systems with random initial conditions. Now he examines the sufficient conditions for this stability, i.e. conditions in which all the moments of the deviations generated by random initial conditions have an upper bound and ultimately tend to zero. A sufficient condition of stability is formulated: if the characteristic equation of the first approximation has simple roots with negative real parts of which the part with the lowest modulus equals α ($\alpha = \min |\mathrm{Re}\ \lambda_i|$), i.e. equals the lowest -- in absolute figures -- real part of the root of the characteristic equation, then the lowest-modulus root of the auxiliary equation

Card 1/2

ACC NR: AP6024369

$$\alpha = B_2 s + B_3 s^2 + \ldots + B_{N+1} s^N \qquad (1)$$

has the modulus s_{min} and the coefficients of this equation are

$$B_2 = \max_i \sum_{k,l=1}^{n} |b_{ikl}|, \ldots, \quad B_{N+1} = \max_{k,l,\ldots e=1}^{n} |r_{ikl\ldots e}| \qquad (2)$$

It is shown that normally statistical stability may be preserved if nonlinear deviations do not exceed several tens of percent. All this, however, still does not resolve the fundamental question of the criterions of statistical instability. Orig. art. has: 2 figures, 17 formulas.

SUB CODE: 12, 06, 09/ SUBM DATE: 16Mar65/ ORIG REF: 005

Card 2/2

L 09209-67 EWT(1)
ACC NR: AP7002736 SOURCE CODE: UR/0424/66/000/004/0003/0012

Author: KRASOVSKIY, A. A. 20

ORG: none

Title: Thermal Noise and the Accuracy Limit of Open Inertial Measuring Systems

Source: Mekhanika Tverdogo Tela, No 4, 1966, pp 3-12

TOPIC TAGS: thermal equilibrium, random process

Abstract: For a general class of open inertial measuring systems, those random errors are considered which are caused by thermal noise in the mechanical elements; since such thermal noise at any finite temperature cannot be eliminated, the accuracy attainable in the presence of this noise is considered to be a limiting one. Rather than use the customary method of studying the thermal fluctuations of inertial systems by the correlation theory of random processes, the author uses general expressions for the momentum matrices of the thermal fluctuations in arbitrary linear passive systems in thermal equilibrium, a method which he used and reported earlier (Izvestiya AN SSSR, Tekhnicheskaya Kibernetika, No 5, 1964; Avtomatika i telemekhanika, No 6, 1965). Here the theory of random processes is evolved for closed inertial systems characterized by single and double integration of the signals of the inertial sensors. It is shown that, in an inertial system, the accuracy limit determined by thermal measurements of accelerometer orientation and spurious accelerations is considerably lower than that for ideal orientation.

Orig. art. has: 4 figures and 2 formulas. [JPRS]

SUB CODE: 20 / SUBM DATE: 28Dec64 / ORIG REF: 008

Card 1/1 0925 1614

L 04987-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD

ACC NR: AT6016439 (A) SOURCE CODE: UR/0000/65/000/000/0267/0281

35
B+1

AUTHOR: Krasovskiy, A. A.

ORG: none

TITLE: Problems in the theory of continuous systems of extremal control of industrial processes 14

SOURCE: International Federation of Automatic Control. International Congress. 2d, Basel, 1963. Diskretnyye i samonastraivayushchiyesya sistemy (Discrete and adaptive systems); trudy kongressa. Moscow, Izd-vo Nauka, 1965, 267-281

TOPIC TAGS: automatic control theory, industrial automation, servomechanism

ABSTRACT: In many continuous industrial processes there are a certain number n of units for controlling servosystems in the industrial process. Production parameters and the course of this process depend on the coordinates of the control units, but there are also certain disturbing factors (material parameter changes, machine and tool wear, etc.). Under conditions where nonautomatically adjusting control circuits (statistical automatons) cannot be used it is advisable to use extremal control. In a development of a previous article (Izv. AN SSSR, OTN, Energetica i automatika, 1961, No. 1) the present author examines several

Card 1/2

L 04987-67

ACC NR: AT6016439

possible systems of extremal control of continuous production processes and certain problems in the theory of these systems. An index Q of production quality having an extremum at the desired parameter values of the manufactured article is chosen when effecting extremal control. This is discussed with reference to putting it into effect and involves time taken for getting out of adjustment, equations of extremal control processes, quality analysis of extremal control processes and the quasi-stationary regime, the self-adjusting system with parametric extremal adjustment of the basic circuit, and the possibility of extremal control in nonautomated monitoring and adjusting. Orig. art. has: 20 formulas and 5 figures.

SUB CODE: 09/ 13/ SUBM DATE: 29Sep65/ ORIG REF: 003/ OTH REF: 001

Card 2/2

L 01034-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD

ACC NR: AT6017614 (N) SOURCE CODE: UR/0000/65/000/000/0179/0189

51
B+1

AUTHOR: Krasovskiy, A. A.

ORG: none

TITLE: Universal, continuous systems for extremum control 14

SOURCE: Vsesoyuznaya konferentsiya po teorii i praktike samonastraivayushchikhsya sistem, 1st, 1963. Samonastraivayushchiyesya sistemy (Adaptive control systems); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 179-189

TOPIC TAGS: automatic control parameter, optimal automatic control, automatic control design, automatic control R and D, nonlinear control system, nonlinear automatic control system

ABSTRACT: Ways of optimizing the performance of continuous systems for extremum control are discussed. The author chooses "universality" as a criterion of performance, and defines it in terms of self-adjusting control systems capable of maximum general accuracy, i. e., the ability to compensate for widest variations of controlled object's characteristics and for external noise, with a minimum of *a priori* information. The conventional systems for extremum control, while superior to proportional control systems in their ability to compensate for changes in object parameters, are severely limited in degree of their universality, especially for controlled objects with iner-

Card 1/2

L 01034-67

ACC NR: AT6017614 O

tia. The same limitation exists in extremum control systems utilizing relay action and oscillatory means for linearization, although such systems may be considered to approach the performance of an ideal relay type regulator in non-inertial applications. The author proposes a self-optimizing extremum control system consisting of two loops: a main control loop and a secondary loop for self-optimization (or self-adjustment). The secondary loop operates on the optimization module of the main control loop in adjusting the appropriate selected parameters to achieve a minimum deviation from the desired output value. The control of multi-dimensional processes requires an optimizing adjustment of numerous parameters in the main control loop. A sequential parameter control may be employed in this case with a substantial sacrifice of response speed. The two-level control system considered in the paper is a special case of a multi-level system in which the main loop is parametrically controlled by a secondary loop, which in turn is parametrically controlled by a third loop, etc. The number of control levels is determined by the desired degree of universality. Orig. art. has: 7 figures, 12 formulas.

SUB CODE: 13,09/ SUBM DATE: 22Nov65/ ORIG REF: 009

awm

Card 2/2

L 3599-66

ACCESSION NR: AP5024027 UR/0057/65/035/009/1537/1545

48
B

AUTHOR: Krasovskiy, A. A.

TITLE: Thermal fluctuations of linear passive systems

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 9, 1965, 1537-1545

TOPIC TAGS: stochastic process, thermal effect, linear system, partial differential equation, mathematic matrix, Brownian motion, elasticity

ABSTRACT: The author has previously employed Nyquist's theorem to prove a theorem with the aid of which one can easily calculate the thermal fluctuations in a linear system that is described by a Lagrangian (Izv. AN SSSR, Tekhnicheskaya kibernetika, No. 5, 1964; Avtomatika i telemekhanika, No.6, 1965). This theorem, which asserts simple matrix equations for the coordinate and velocity correlation matrices, is restated and discussed but not proved in the present paper. Brownian motion and the fluctuations of a torsion pendulum are discussed as examples. Einstein's Brownian motion equation is derived, and the analogous equation for the Brownian motion of charged particles in a magnetic field is obtained. The theorem is now generalized to the case of distributed parameters, i.e., to the case in which the generalized coordinates are functions of continuously variable paramet-

Card 1/2

L 3599-66
ACCESSION NR: AP5024027

ers (regarded here as Cartesian coordinates in space). The generalization is accomplished by a limiting process in which the number of generalized coordinates tends to infinity, and the generalized theorem applies only to such systems as can be obtained by such a limiting process from a linear Lagrangian system. The generalized theorem is employed to discuss the thermal fluctuations of a stretched string and of a circular elastic plate supported at the periphery and loaded at the center. Orig. art. has: 48 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 14Sep64 ENCL: 00 SUB CODE: GP, MA

NO REF SOV: 009 OTHER: 001

Card 2/2

L 65126-65 EWT(m)/EPF(c)/EWP(j)/T RM
ACCESSION NR: AP5021590 UR/0286/65/000/013/0064/0064

AUTHORS: Belyy, V. A.; Yurkevich, O. R.; Krasovskiy, A. M.

TITLE: A method for depositing coatings of polymer materials. Class 39, No. 172473

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1965, 64

TOPIC TAGS: polymer, electrostatic charge, electromagnetic field, automatic process

ABSTRACT: This Author Certificate presents a method for depositing coatings of polymer materials by submerging a part into electrostatically charged polymer powder in a suspended condition. An electromagnetic field is used to automate this process.

ASSOCIATION: Otdel "Mekhanika polimerov" AN BSSR (Division "Mechanics of Polymers," AN BSSR)

SUBMITTED: 07Mar64 ENCL: 00 SUB CODE: IE,EM

NO REF SOV: 000 OTHER: 000

Card 1/1

KOVALEV, M.M., prof.; KRASOVSKIY, A.P., kand. med.

Problems of surgical tactics in endemic nodular goiter with consideration of the results of autoradiography. Khirurgiia 40 no.12:56-63 D '64. (MIRA 18:3)

1. Kafedra fakul'tetskoy khirurgii (zav.- prof. M.M. Kovalev) Chernovitskogo meditsinskogo instituta.

KRASSOVSKIY, A. P., (Cand. Tech. Sci.)

"Economic Justification of a Choice of Flow Variant Based on the Example of Electric-vacuum-device Manufacturing Industry"

(Assembly-line Methods in Serial Manufacturing of Machinery and Tools) Moscow, Mashgiz, 1958. 325p. **ed. Neymark, A. I.)**

KRASOVSKIY, A. P., Cand Med Sci -- "Data ~~for~~ (on) functional and pathomorphological changes of the thyroid ~~gland~~ in ~~the presence of~~ (or some) nodal forms of goiter." L'vov, 1961. (L'vov State Med Inst) (KL, 8-61, 262)

KOVALEV, M.M., prof.; KRASOVSKIY, A.P., kand.med. nauk.

Autoradiography and surgical treatment of patients with nodular endemic goiter. Vrach. delo no.9:67-71 S '63. (MIRA 16:10)

1. Chernovitskiy meditsinskiy institut.
(GOITER) (THYROID GLAND — SURGERY)
(AUTORADIOGRAPHY)

SHINKERMAN, N.M.; KRASOVSKIY, A.P.

Use of minimum doses of radioactive iodine I^{131} for histoautoradiographic examination of nodules and extranodular thyroid tissue in endemic goiter. Med. rad. 8 no.9:29-34 S '63. (MIRA 17:4)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. N.M. Shinkerman) i fakul'tetskoy khirurgii (zav. - prof. V.L. Khonkin) Chernovitskogo meditsinskogo instituta.

L 09269-67 FSS-2/EWT(1)/EWG(k)-2 SCTB TT/DD/GD/GW 12

ACC NR: AT6036480 SOURCE CODE: UR/0000/66/000/000/0034/0036

AUTHOR: Arzhanov, I. M.; Baregovkin, A. V.; Dryanov, I. I.; Duyanov, P. V.; Zaloguyev, S. N.; Kamen'shchikov, Yu. V.; Kovalev, V. V.; Krasovskiy, A. S.; Kuznetsov, S. V.; Litsov, A. N.; Nikitin, A. V.; Nistratov, V. V.; Poruchikov, Ye. A.; Potkin, V. Ye.; Teret'yev, V. G.; Fedorov, Ye. A.; Khlebnikov, G. F.; Yaroshenko, G. L.

61. 61

ORG: none

TITLE: Results of clinical and physiological investigations of the crew of the first multiman Voskhod spacecraft [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 34-36

TOPIC TAGS: space medicine, space physiology, weightlessness, bodily fatigue, stress reaction, combined stress, cardiovascular system, central nervous system, manned spaceflight/Voskhod-1

ABSTRACT: The inclusion of a physician in the crew of the Voskhod-1 made it possible to increase medical investigations of the crew members during flight and to compare them with results of preflight and postflight examinations. The scope of the physiological examinations was selected in order to obtain a more complete evaluation of the functional condition of the cardiovascular and central nervous systems, and the function of

Card 1/4

external respiration of the cosmonauts. Physical exercises and orthostatic tests were included to detect earlier signs of physiological shifts.

Examinations were carried out before and after training in the ship, where certain conditions of flight were simulated, and also two weeks before flight. Postflight examination was begun fifteen minutes after landing and was continued for the first four days after the flight and also two weeks later.

After landing, the cosmonauts were active, looked somewhat excited, and complained of general fatigue. They were found to have hyperemia of the mucosa of the upper respiratory tract and conjunctivitis.

Komarov' s weight dropped by 2.6%, Feoktistov' s weight dropped by 4%, and Yegorov' s by 3.9%. Weight loss was determined by Zhdanov to be due to water and fat loss. Neurological examination revealed a light swaying in the Romberg position, a tremor of the fingers, and increased perspiration. In addition, Yegorov showed a contraction of the retinal arteries. Disruption of vision and vestibular difficulties were not noted. Changes in EEG indicated an increase in inhibitory processes in the cortex of the brain. A diminution in work capacity was established by

psychological experiments (increase in the number of mistakes, increase in latent periods). D

Indices of cardiovascular activity during rest did not exceed wide norms. However, an increase in pulse frequency was noted (Komarov up to 96, Feoktistov up to 100, and Yegorov up to 94 beats/min), as well as moderate drop in arterial pulse pressure at the expense of an increase in diastolic pressure. All three cosmonauts, when subjected to exercise, showed a significant increase in the pulse rate and inertia in the stroke volume. Feoktistov and Yegorov showed a significant diminution in the heart stroke volume and minute circulation of the blood during the passive orthostatic test. This could indicate a discuption of the venous inflow to the heart.

Postflight blood examinations indicated neutrophilic leukocytosis and eosinopenia. Urine was found to contain significant quantities of salts, chiefly urates, single erythrocytes (in the field of vision), and an increase in the excretion of 17-oxycorticosteroids. Eosinopenia, an increase in excretion of products of hormone decomposition, indicated the development of a stress reaction in cosmonauts. Since some of the indications found on the flight were also found after training in the train-

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ACC NR: AT6036480

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ing ship, there is reason to attribute them to limitation of motor activity under conditions of weightlessness. The functional shifts found after flight are indications of a general fatigue, a moderate stress reaction, and a certain amount of detraining. In general, the changes observed in the cosmonauts were of one type. The differences found between the cosmonauts can be attributed to individual differences. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 22 / SUBM DATE: 00May66

Card 4/4 ejb

L 08268-67 FSS-2/EWT(1)/EEC(k)-2 SCTB TT/DD/GD/GW

ACC NR: AT6036481 SOURCE CODE: UR/0000/66/000/000/0036/0037

AUTHOR: Arzhanov, I. M.; Bryanov, I. I.; Baturenko, V. A.; Beregovkin, A. V.; Buyanov, P. V.; Kovalev, V. V.; Kondrakov, V. M.; Krasovskiy, A. S.; Kuznetsov, O. N.; Kuznetsov, S. V.; Nikitin, A. V.; Nistratov, V. V.; Teret'yev, V. G.; Fedorov, Ye. A.; Khlebnikov, G. V.

ORG: none

TITLE: Some results of the postflight examination of P. I. Belyayev and A. A. Leonov following their flight on the Voskhod-2 spacecraft [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 36-37

TOPIC TAGS: space medicine, postflight medical examination, bodily fatigue, body weight, cardiovascular system, oculocardiac reflex, unconditioned reflex, space psychology, oxygen consumption, respiration, pulmonary ventilation/Voskhod-2

ABSTRACT: Postflight examinations of the Voskhod-2 crew members, Leonov and Belyayev, were performed on the third and fourth days after the flight and again a month later. The cosmonauts complained of light fatigue. They were found to have hyperemia of the mucosa of the nose and throat and conjunctivitis of the eyelids and eyeballs. They had lost weight

Card 1/3

Their pulse showed a certain lability. Pulse frequency rose significantly during mild physical exertions and changes in the position of the body. There was an increase in intraventricular conductivity, an increase in the systolic index (7—11%), and a delay in restoration of hemodynamic indices after physical exercise.

Belyayev's oxygen consumption increased by 23% and Leonov's by 14% as compared with preflight levels. Vital capacity of the lungs diminished by 8—12%, while pulmonary ventilation increased by 51—18%.

Neurological examinations revealed a light tremor of the fingers, a high orthostatic reflex with an absence of pulse reaction to the oculo-cardiac reflex, and an increase in the slow bioelectrical activity of the brain cortex. Psychological tests revealed an increase in distribution and in the middle magnitudes of the duration of the period of sensory motor reaction. Since this was not accompanied by errors, it is possible to assume that the fatigue observed in cosmonauts was a compensatory reaction. Blood and urine examination on the third day after flight did not differ substantially from preflight levels. Biochemical examination uncovered an increase of chlorides, adrenalin, noradrenalin, and 17-oxycorticosteroids in the urine.

L 08268-67

ACC NR: AT6036481

The observed shifts in physiological indices were short-term and reversible. They indicated the development of moderately marked fatigue in the subjects. Thus, despite the complexity of the flight, the postflight examinations revealed only moderate functional changes in the two cosmonauts. There was no difference in the nature of these changes in the cosmonauts. This indicates a high degree of training and a good neuropsychological and physical preparation for spaceflight. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 22 / SUBM DATE: 00May66

Card 3/3 egk

L 3925-66 FSS-2/EWT(1)/FS(v)-3 DD/RD

ACC NR: AP5024151 SOURCE CODE: UR/0216/65/000/005/0633/0646

AUTHOR: Kas'yan, I. I.; Krasovskiy, A. S.; Kolosov, I. A.; Lomova, M. A.; Lebedev, V. I.; Yurov, B. N.

ORG: none

TITLE: Some physiological reactions of man to short-term weightlessness

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 5, 1965, 633-646

TOPIC TAGS: weightlessness, parabolic flight, human physiology, vestibular analyzer

ABSTRACT: Experiments were conducted with the participation of 31 men (aged 23—38 yr) representing various professions. The subjects were subdivided into 4 groups according to profession. Parabolic flights took place on a jet aircraft where weightlessness could be produced for 40—50 sec. Examinations took place before and after weightlessness and g-forces were 2.5—3.5 g with 2—3 min breaks between parabolas. In all, 120 flights representing 360 parabolas were flown. During the flights, the bioelectricity of the brain (EEG), heat biopotentials (EKG), respiration rate, blood composition, and vestibular reactions were studied. Results are given in Figs. 1 and 2 and Tables 1 and 2. It was concluded that periodic parabolic flights are useful in acquainting cosmonauts with short-term weightlessness and establishing criteria for selecting space-flight crews. No pathological alterations in physiological function or radical deviations in blood morphology or biochemistry were noted as a result of parabolic flights.

Card 1/5 UDC: 629.195:612.829.3

L 3925-66

ACC NR: AP5024151

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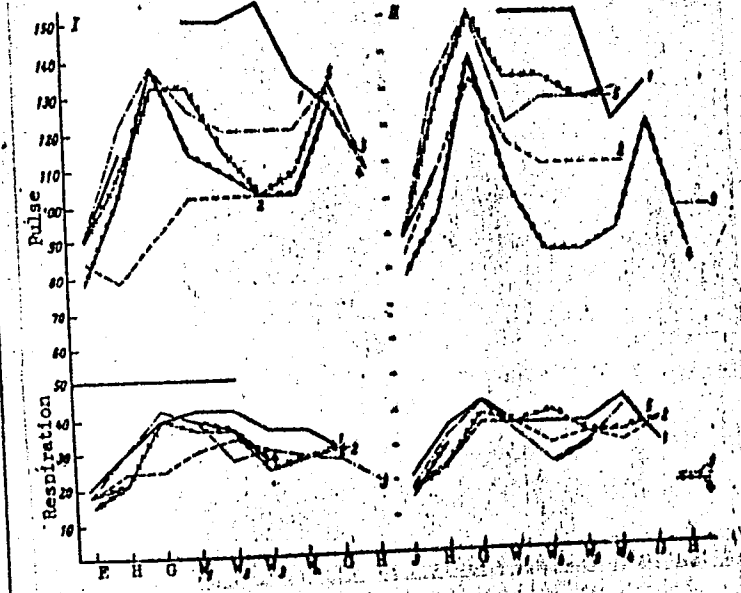

Fig. 1. Change in pulse and respiration rate of a subject at various stages of parabolic flight.

I - First parabola; II - third parabola; 1—5 - sequence of flights; E - Earth; H - horizontal flight; G - g-load; W - weightlessness (W_1 - 10 sec; W_2 - 20 sec; W_3 - 30 sec; W_4 - 40 sec).

Card 2/5

L 3925-66
ACC NR: AP5024151

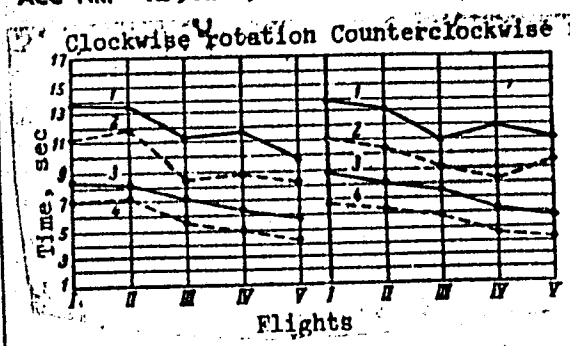

Fig. 2. Duration of postrotational nystagmus (1 - before, 2 - after flight) and counterrotation illusions (3 - before, 4 - after flight) during the performance of a Voyachek otolithic probe

Table 1. Changes in respiration rate at various stages of parabolic flight (compared with horizontal flight prior to weightlessness)

Change in resp. rate	G load	Weightlessness			G load	Horizontal flight
		I parab.	II parab.	III parab.		
Increase	11	9	7	—	8	—
No change	14	19	20	8	13	15
Decrease	3	3	4	—	2	11
No. investigated	28	31	31	8	23	26

Card 3/5

L 3225-66
ACC NR: AP5024151

Table 2. Content of nonesterized fatty acids during parabolic flights (milliequivalents/liter)

Subject No.	1963 flight data	Before flight	After 1st flight	After 2nd flight	Comments
1	12	630	1550*	—	1. No flight before first test
	23	380	660*	660*	"
	12	200	1390*	—	
	16	—	270	260	2. First test after normal flight
	17	—	220	310*	3. Flight before first test
2	24	320	380*	—	4. No flight before first test
	16	—	290	260*	5. 3 flights before first test
3	23	260	120*	—	6. No flights before first test
	24	—	320	430*	7. 1 flight before first test
4	17	240	250*	—	8. No flights before first test
	26	200	270*	430*	"
	17	440	550*	470	"
5	23	200	320*		
	24	—	320	760*	9. First test after normal flight
	17	—	440*	220	"
6	23	370	530*	—	10. No flights before first test
7	26	—	320	300*	11. First test after normal flight

* Flights simulating weightlessness

Card 4/5

L 3925-66
ACC NR: AP5024151

After the first exposure to parabolic flight, it was common for the concentration of nonesterized fatty acids to increase. Criteria indicating sufficient stability to short-term weightlessness are: insignificant changes in pulse rate relative to normal values during weightlessness, abbreviated illusions of counterrotation and postrotational nystagmus after a series of parabolic flights, and the absence of unfavorable sensory and vestibular autonomic reactions characterized by spatial illusions, giddiness, or nausea. Orig. art. has: 5 tables and 4 figures. [CD]

SUB CODE: LS/ SUBM DATE: 27May65/ ORIG REF: 024/ OTH REF: 013/ ATD PRESS: 4120

Card 5/5

L 27300-65 EWP(e)/EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pf-4 IJP(c) MJW/JD
ACCESSION NR: AP5002180 S/0032/65/031/001/0109/0112

28
21B

AUTHORS: Krasovskiy, A. Ya.; Troshchenko, V. T.

TITLE: Effects of specimen size on the strength of porous metalloceramic materials

SOURCE: Zavodskaya laboratoriya, v. 31, no. 1, 1965, 109-112

TOPIC TAGS: metal ceramic material, porous metal, porous material, metal testing/ APZhM iron powder

ABSTRACT: The strength behavior of porous metalloceramic materials predicted by equations derived by V. T. Troshenko (Staticheskaya teoriya prochnosti i deformativnosti poristykh metallokeramicheskikh materialov, Sb. "Trudy nauchno-tekhnicheskogo soveshchaniya po statisticheskim metodam prochnosti v mashinostroyenii," Izd. VINITI, M.-L., 1964) was experimentally investigated. Two types of specimens (see Fig. 1 on the Enclosure) were machined from 30x30x150-mm and 15x15x240-mm baked (at 1473K for 2 hours in H_2) porous samples of iron. The iron powder (type APZhM) contained by percent 98.2 Fe, 0.09 C, 0.01 S, 0.3 Mn, 0.02 P, and had a size distribution as follows: particles greater than 0.14 mm - 0.5%, 0.14-0.09 mm - 16.85; 0.09-0.071 mm - 39.1, 0.071-0.053 mm - 23.15, less than 0.053 23.2%. Machining effects were eliminated by grinding. The samples

Card 1/4

L 27300-65
ACCESSION NR: AP5002180

were tested in tension, and the results (which are summarized in Fig. 2 on the Enclosure), were compared with the equations (see reference above) which describe the expected yield stress distribution, the average yield stress, and the standard deviation as a function of material properties and specimen size. It was found that: a) since the data form straight lines in Fig. 2 on the Enclosure, the yield stress distribution is very close to a normal; b) the yield stress decreases with increasing specimen length and with decreasing cross-sectional area, and is greater for the larger volume samples; c) the standard deviation with long samples was much larger than that with short samples. The calculated results agreed well with the experimental results. Orig. art. has: 3 figures, 5 formulas, and 2 tables.

ASSOCIATION: Institut problem materialovedeniya Akademii nauk UkrSSR (Institute of Material Behavior Problems of the Academy of Sciences UkrSSR)

SUBMITTED: 00 ENCL: 02 SUB CODE: MM

NO REF SOV: 003 OTHER: 001

Card 2/4

L 27300-65
ACCESSION NR: AP5002180

ENCLOSURE: 01

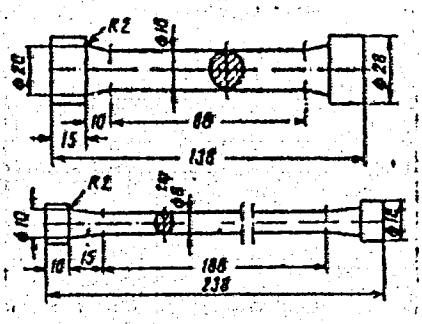

Fig. 1. Specimen dimensions

Card 3/4